

A SUMMARY OF CATTAIL-SPRAYING OPERATIONS IN NORTH DAKOTA: 1991-97

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In 1989, the USDA began to experiment with cattail management as a method for limiting sunflower losses caused by flocks of foraging blackbirds. Dense stands of cattail, which often hold large numbers of blackbirds, were thinned with glyphosate herbicide (Rodeo[®]). Based on results from research conducted in North Dakota, a cattail management program was initiated by the USDA in 1991.

METHODS

Wildlife Services - a division within USDA helping agricultural producers with wildlife-caused losses - has a program that offers glyphosate treatments free to owners of cattail-dominated wetlands (Phone #: 701-250-4405). The glyphosate is applied by fixed-wing aircraft in August or September. The following year, the treated wetlands display a linear pattern of open water and living vegetation. Open water strips 15-m wide alternate with bands of living vegetation typically 6-m wide. If water levels are ≥ 12 inches and remain stable or increase through time, treatments can last >4 years.

Wildlife Services maintains a database that includes the landowner's name, wetland location, and acres of wetlands sprayed with glyphosate. Here we summarize data for treatments applied in North Dakota from 1991 through 1997. An overall summary is presented followed with separate analyses by county and year. We estimated the total acres of treated wetlands by dividing the sprayed acres by 0.70, which represents an average spray coverage of 70% per wetland.

RESULTS

Through 1997, Wildlife Services has treated 29,392 acres of wetlands in North Dakota. The combined acreage of treated wetlands from 1991 through 1995 was equivalent to the acreage treated during the latter two years of the program (Fig. 1). Thirty of the 53 counties in North Dakota have received at least one glyphosate treatment. La Moure, Ramsey, and Nelson lead all other counties in acres sprayed with $>3,000$ each, followed by Barnes and Stutsman counties with $>2,000$ (Table 1). County rankings were correlated ($r_s = 0.75$, $P < 0.0001$) between acres of planted sunflower and acres of treated wetlands (Table 1). At an application cost of \$61/acre, Wildlife Services has expended about \$1.8 million to control cattail growth in North Dakota's wetlands.

DISCUSSION

Wildlife Services is seeking ways to reduce the cost of treating wetlands with glyphosate, and experiments beginning this year will focus on improving cost effectiveness by lowering both the dilution and application rates. We are now gathering data to construct mathematical models that will estimate the overall efficacy of the cattail management program.

Glyphosate applications will continue at about 4,500 acres/year in North Dakota. The large increases in treated acres observed in 1996 and 1997 were due to an influx of funds left over from the cattail-research program and the blackbird-hazing program, which was terminated in 1995. Sunflower producers should see less local damage because cattail management will inhibit blackbirds from forming large flocks that intensify losses.

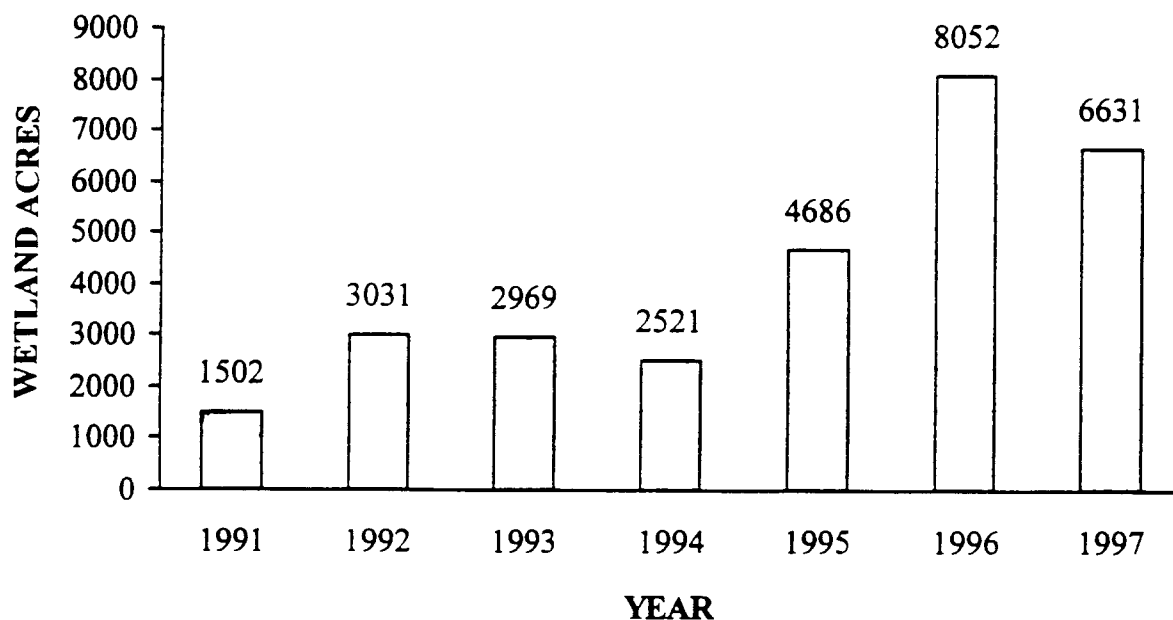


Figure 1. Annual wetland acreage treated in North Dakota with glyphosate herbicide from 1991-97 by UDSA/Wildlife Services.

Table 1. Acres^a of wetlands treated with glyphosate (Rodeo[®]) from 1991 through 1997 in North Dakota.

County	Year								Spray	Sunfl.
	1991	1992	1993	1994	1995	1996	1997	Total	Rank ^b	Rank ^c
Barnes	29	287	337	— ^d	—	850	1,366	2,868	4	1
Benson	—	119	—	—	414	67	—	600	13	12
Burleigh	—	—	—	—	—	203	—	203	20	26
Cass	—	74	—	—	—	—	—	74	25	6
Cavalier	—	—	—	—	—	1,249	246	1,494	9	17
Dickey	—	—	606	—	1,119	101	133	1,959	6	4
Eddy	92	—	—	—	—	331	76	500	15	11
Foster	501	63	—	—	304	57	182	1,107	11	7
Griggs	502	800	—	—	—	109	—	1,411	10	16
Kidder	—	—	—	59	—	80	—	139	22	28
La Moure	—	572	576	—	294	1,963	251	3,656	1	3
Logan	—	—	—	—	43	—	19	61	26	23
McHenry	—	—	15	—	—	—	436	451	16	13
McKenzie	—	—	—	—	—	250	—	250	19	30
McLean	—	—	—	—	—	—	130	130	23	25
Nelson	89	896	—	1,009	303	163	717	3,176	3	8
Pierce	—	—	—	—	43	63	—	106	24	19
Ramsey	—	105	—	—	1,143	456	1,733	3,436	2	9
Ransom	—	—	83	—	—	754	61	899	12	10
Richland	—	—	286	—	—	—	—	286	18	22
Rolette	—	—	—	—	—	—	140	140	21	27
Sargent	—	—	838	627	—	16	43	1,524	8	15
Sheridan	—	—	—	—	—	—	53	53	27	20
Steele	—	—	—	—	—	50	—	50	28	18
Stutsman	220	115	227	—	577	851	243	2,234	5	2
Towner	—	—	—	—	—	—	31	31	29	24
Walsh	—	—	—	—	151	106	307	564	14	14
Ward	—	—	—	—	—	—	313	313	17	21
Wells	68	—	—	827	294	324	152	1,666	7	5
Williams	—	—	—	—	—	9	—	9	30	29
All	1,502	3,031	2,969	2,521	4,686	8,052	6,631	29,392		

^a Calculated by dividing acres of treated cattail by 0.70, the average spray coverage.

^b Counties ranked according to acres of wetlands treated from 1991 through 1997.

^c Counties ranked according to planted acres of sunflower in 1996.

^d No treatments applied.